2.0 PROPOSED ACTION AND ALTERNATIVES

The proposed action is based on previously approved exploration activities in the NPR-A. The Applicant has proposed a 2-site, 2-year program with multiple access options to provide operational flexibility and to optimize the Applicant's ability to determine whether oil and gas reserves exist on its leases. During a winter exploration season, wells may be drilled at either location shown in Figure 2.

The number of wells and sidetracks drilled will depend on a number of variables, including results of ongoing drilling and seismic work and weather effects on tundra travel and ice construction. Prior to drilling, the Applicant will provide BLM with the locations of wellsites to be drilled, including bottomhole locations.

Notices of Staking for proposed pad locations were filed and field inspections were performed during July 2002, as required for BLM approval of the Applicant's surface use plan. Representatives from the BLM, NSB, Inupiat Community of the Arctic Slope (ICAS), City of Barrow, and Native Village of Barrow accompanied the Applicant during site visits. New access routes and stream crossings were also inspected during summer 2002, with assistance by ICAS. Final locations were selected to optimize access and minimize environmental impact. Within the NPR-A, all drill sites and many segments of access routing are on lands addressed by the IAP/EIS. Some segments of new routing are within the NPR-A but outside the Northeast Planning Area.

2.1 THE PROPOSED ACTION

The proposed 2-year exploration program involves federal oil and gas leases AA-081854 and AA-081851. Major elements of the proposed action include the following:

- Initial access by ice road or hardened snow trail. Several optional routings include portions of existing, authorized ROWs.
- Construction of up to two ice drill pads and ancillary facilities, with up to two wells and two sidetracks per pad. Wells will be drilled as straight holes or directionally. An insulated over-summer ice pad may be constructed.
- Construction of an ice airstrip, remote camp ice pads and infrastructure, and/or staging ice pads (seasonal and/or for over-summer storage).
- Up to 123.5 million gallons (MG) of water withdrawn each winter from authorized lakes for use in ice construction, drilling operations, and domestic supply.

Initial access is scheduled to begin late 2002, when tundra travel opens. Demobilization will be completed by the end of the winter 2003-2004 tundra travel season. Plans of Operations and Surface Use Plans are available on http://www.phillipsalaska.com/permits/.

The proposed action is summarized in Table 1. The current analysis focuses on new routing to new drill sites, ancillary facilities, and water supply lakes identified in the proposed action.

Table 1 Summary of Proposed 2-Year Project

Project Component	Maximum Activity	
	NPR-A Federal	Non-Federal
No. of wells Well cellar area[a]	Up to 4 wells Up to 0.01 acres	None
Ice drill pads[b]	2 pads (up to 23 acres each; up to 46 acres total)	None
Main access ice road[c]	68 miles (851 acres)	14 miles (299 acres)
Ice airstrip	Up to 2 airstrips (up to 16 acres)	None
Hardened snow trails[d]	4 optional routes: up to 215 miles (up to 3,636 acres)	23 miles (388 acres)
Water usage	Up to 123.5 million gallons (with ice road to Barrow) Up to 42 million gallons (without ice road to Barrow)	Up to 14 MG for ice road
Lakes	28 (31 new lakes + 2 previously permitted lakes)	5

All quantities are approximate.

[a] Installed through the ice drill pad; one for each surface hole. Total program assumes 2 wells; 2 sidetracks per pad.

[b] Up to 2 ice pads may be constructed; 1 over-summering insulated ice pad will be part of one ice drilling pad.

[c] Up to 8 additional miles would be associated with a local ice road system connecting pads and water sources.

[d] Considers the maximum total of all optional routes of hardened snow trail. Acreage affected depends on type of vehicle and extent of use; estimates based on a path 140 feet wide.

Italics indicate activity that would be repeated for 2003 – 2004 winter exploration season.

This EA evaluates 2 new drill sites; 4 optional hardened trail routes; up to 68 miles of new ice road, with local spur ice roads needed to connect ice, water sources, and ice airstrips, as well as potential use of existing authorizations through the 2003-2004 winter drilling season, as needed. This analysis assumes one ice pad per site, although a pad could be constructed more than one time (e.g., for well testing a second season).

The proposed project is a step-out from exploration programs already authorized under the current leasing program, and previously evaluated in EA: AK-020-00-011, EA: AK-023-01-003, EA: AK-023-005, and EA: AK: 023-02-033, to which this analysis is tiered and which are incorporated by reference. Activities similar to those currently proposed (e.g., ice construction, access by hardened trail, drilling) have occurred in the NPR-A during the 1999-2000, 2000-2001, and 2001-2002 winter seasons without significant adverse impact to subsistence or other important resources in NPR-A.

NOTE: This EA relies heavily on previous NEPA evaluations for similar authorized winter exploration programs in NPR-A – an approach that is encouraged under NEPA (40 CFR Part 1502 and 1506) and BLM NEPA guidelines. To the extent practicable, the following discussions are tiered to, and incorporate by reference, the 1998 IAP/EIS, EA: AK-020-00-011, EA: AK-023-01-003, and EA: AK-023-005. To avoid repetition, only the specific reference in relevant NEPA documents will be provided in each section.

2.1.1 Wellsite Access

Primary access to the main project area will be by hardened snow trail and/or ice road. Several optional routes are proposed to the Puviaq area: two from Barrow, one from Pitt Point (Camp Lonely), one via a sea ice road entering the NPR-A at Harrison Bay, and one from the main exploration area. The latter route was approved last winter for transport of the drill rig to the 2002 insulated (over-summering) ice pad at Puviaq.[29] Removal of the drill rig from the project area would not involve construction of a new ice road. Access routes to the Puviaq area are shown in Figure 2.

The primary (northern) overland trail/ice road route from Barrow to Puviaq crosses lands owned by the Ukpeagvik Inupiat Corporation (UIC), the village corporation for Barrow. The alternate overland trail route from Barrow to Puviaq crosses UIC and Arctic Slope Regional Corporation (ASRC) lands. The Applicant is in the process of finalizing agreements with UIC and ASRC that address access via these private lands.

[29] USDOI BLM. FONSI and ROD FF-093572. March 2002.

Access to the drill sites will proceed within the proposed corridors by the shortest route possible, as constrained by previous routings, water source locations, terrain, stream crossings, animal denning, and snow cover. New access corridors were cleared for archaeological and cultural resources.

Under either year of the proposed action, the maximum length of new ice road would be approximately 68 miles from Barrow to the Puviaq sites (54 miles on federal lands within the NPR-A and 14 miles on Native land within the NPR-A). Ice roads will be approximately 35 feet wide and 6 inches thick; pullout or passing areas may be constructed at various locations for safety. Up to 8 miles of ice road spurs may also be constructed to access water sources, airstrips, and staging areas. Rig mats or similar structures may be used to minimize disturbance at selected locations. If an ice road is constructed to Barrow, markers will delineate road margins and mileage. Monitors will be assigned to keep ice roads clean through the season. All structures will be removed prior to breakup.

Up to nine minor ice bridges may be required for stream or river crossings if an ice road is constructed from Barrow to the project site. Ice bridges are not required for stream crossings along the hardened snow trail. For all stream crossings, specific routings will take advantage of areas with low relief banks. Crossings will comply with ADF&G Title 16 permit requirements.

A lighted ice airstrip will be constructed to provide emergency access and backup logistical support for the duration of the drilling season. Two sites have been selected, but only one airstrip is likely to be constructed per year. The airstrip will be constructed on tundra, possibly as a widened portion of ice road.

The location and size of airstrip constructed will be based on logistical and operational considerations each year. Any airstrip location not evaluated in this EA or in previous EAs will comply with relevant 1998 ROD stipulations and be subject to additional NEPA review Aircraft operations are described in Section IV.A.1 of the IAP/EIS, and Section II.A.1 of EA: AK-020-00-011 and EA: AK-023-01-003, from which this EA is tiered and which are incorporated by reference.

There are no existing roads or other permanent facilities in the vicinity of proposed drill sites, and no permanent facilities will be constructed for this exploration program. The closest developed areas are at Nuiqsut, (approximately 85 miles southeast of Puviaq) and Barrow (approximately 65 miles northwest of Puviaq). Another permanent facility is located at Camp Lonely, an unmanned Air Force Radar Site located at Pitt Point on

the Beaufort Sea coast, about 30 miles northeast of Puviaq 1.

The existing Camp Lonely installation includes a 5,000-foot lighted gravel runway, a large gravel pad, and a barge landing. Camp Lonely was addressed in the IAP/EIS as an existing facility used to support exploration activities in the NPR-A.

2.1.2 Water Supply

Fresh water will be utilized for all ice road and pad construction and maintenance, drilling operations, and camp use, as described in Section II.A.2 of EA: AK-020-00-011 and EA: AK-023-01-003, from which this EA is tiered and which are incorporated by reference. Water requirements are listed in Table 2.

Table 2 Project Water Requirements

Project Element	Water Volume million gallons (MG)[a]
2 drill pads with 60 days drilling	13.8
2 airstrips	10.2
68 miles ice roads	81.6
8 miles of ice road spurs	9.6
60 days of drilling/operations	4.3
Other: ice bridges, pullouts, etc. [b]	4.0
PROJECT TOTAL	123.5 MG

[a] Based on all proposed activities completed in 1 year. See Table 1 for estimated total project requirements.

[b] Potable water would come from one source or combination of the following three sources: hauled from Barrow, hauled from the Kuparuk or Alpine Field, or pumped from lakes and processed through the drilling or construction contractor's water purification system to make it potable.

The estimated maximum water use for this project is up to 123.5 MG for a winter drilling season. The estimated minimum water requirement could be as low as 21 MG (one season, one pad, one well, no ice road). Thirty-three lakes have been identified as sources for fresh water. Collection and use of water and ice chips (aggregate) for ice construction and daily operations are described in Appendix A, Section IV.A.1 of the IAP/EIS, and Section II.A.2 of EA: AK-020-00-011 and EA: AK-023-01-003, from which this EA is tiered and which are incorporated by reference. Water withdrawal and use will be consistent with 1998 ROD stipulations 18 through 22.

At breakup, ice facilities will thaw, and meltwaters will recharge the local ecosystem. Ice construction and related maintenance activity are described in Section IV.A.1 of the IAP/EIS and Section II.A.1 of EA: AK-020-00-011 (pp. II-2 and II-3), and EA: AK-023-01-003 (p. II-4 and II-5), from which this EA is tiered and which are incorporated by reference.

2.1.3 Drilling and Testing Operations

The Puviaq drill pads will be approximately 1,000 by 1,000 feet, or equivalent acreage.[30] This is larger than the typical exploration ice pad because there will be additional storage requirements at this remote location. Drill pads will be approximately 6 inches thick, with additional ice thickness under the drill rig and cuttings storage areas, as evaluated in prior CPAI projects.[31]

Drill pad locations were surveyed, staked, and inspected by BLM during summer 2002. The locations identified in the Notices of Staking and shown in Figure 2 are:

- Puviaq 1 - 35-T16N-R10W; 1147' FNL & 805' FWL
- Puviaq 2 - 16-T15N-R10W; 247' FNL & 1645' FWL

[Coordinates are Clark 1866 (NAD 27)]

Drilling and testing operations are described in Section IV.A.1 of the IAP/EIS and Sections II.A.2 and A.3 of EA: AK-020-00-011, from which this EA is tiered and which are incorporated by reference. Site development and operations plans will incorporate state and federal requirements for drilling oil wells in the NPR-A, and BLM Conditions of Approval for a Permit to Drill.

The drill rig has been stored at an over-summering ice pad near Puviaq 1. The rig mobilization process will begin as soon as tundra travel is open to transport by Rolligon or other approved all-terrain vehicle (ATV) via hardened overland trail or by ice road.

Over-summering ice pad near Puviaq

Prior to spring breakup, drilled wells will be temporarily suspended or plugged and abandoned, according to BLM and AOGCC regulations. When operations are

[30] This EA assumes ice pads will be up to 1,000 ft x 1,000 ft, but they may be smaller, depending on storage needs.

[31] USDOI BLM. EA: AK-020-00-011, Appendix A.

completed, the drill rig will be transported out of the project area and areas of operation will be cleaned and inspected as necessary.

If the Applicant plans exploration drilling in the area during the second winter (2003-2004), the rig will be placed on an insulated ice pad for temporary storage. CPAI has applied for a Corps of Engineers permit to construct an over-summering ice pad for this purpose. The ice pad will be approximately 245 feet x 265 feet (1.5 acres) with insulation over the top – similar to the ice pad constructed for over-summering the drill rig in 2002. The temporary rig storage pad will be constructed as part of the ice drilling pad in either Section 35, T16N, R10W or Section 16, T15N, R10W, depending on where drilling is scheduled. When winter tundra travel is open in late 2003-early 2004, the rig will be moved off site.

Other options for storing/staging the drill rig include transport to Kuparuk or another site on the gravel road system, construction of an insulated ice pad (e.g., at a future drill site), or storage at an existing gravel pad in the NPR-A (e.g., Camp Lonely).

Vertical Seismic Profiles

Vertical seismic profiles may be acquired, using vibroseis trucks in a manner similar to that described in Section II.A.8 of EA: AK-020-00-011, which is incorporated herein by reference. The technique involves a vibrating plate that sends shock waves through the ground; no drilling or explosives are required. Vibroseis units start at the well bore and move out, stopping at various distances to collect data. Generally, this activity would take place within 3 miles of the drill pad.

2.1.4 Ancillary Facilities

The proposed action includes various facilities in support of drilling activities, as described below.

Camps will be established to support ice construction and/or supply activities, as described in Section II.A.4 of EA: AK-023-01-003. Drilling camps are typically located on the drill pad. Remote camps are planned to be located on ice pads approximately 300 feet x 300 feet in size, at least 500 feet from a waterbody. Up to five potential locations are identified, although several are route-specific and would not be constructed if that access route was not selected. Remote camp pad sites may be located in Sections 26, 27, 34, or 35, T16N, R10W; Sections 9, 16, or 10 T15N, R10W; Sections 9 or 10, T14N, R1W; Sections 16 or 17, T17N, R15W; and Sections 20 or 21, T17N, R17W (Umiat Meridian). Support facilities may also be established at Camp Lonely. Staging pads up to approximately 600 feet x 600 feet may be constructed on Native lands in Section 24, T22N, R18W, and/or Sections 23 or 26, T22N, R17W (Umiat Meridian).

The Applicant may erect a communications tower on either pad. These towers are about 100 feet tall and are guyed by concrete deadmen about 4 cubic feet in size. The deadmen may be placed on small ice pads located just off the edge of the drilling pad. Other possible facilities include a small warm-up shelter near the airstrip, pump houses on water sources (lakes), and light plants near pump houses and along ice roads for safety, as described in Section II.A.4 of EA: AK-023-01-003, which is incorporated herein by reference.

On each drill pad, up to 75,000 gallons of diesel fuel and 317,000 gallons of crude oil (for wells that are tested) will be stored in lined, bermed storage areas. Diesel fuel for remote camps will be stored in tanks, typically 3,000 gallons in capacity or less, and placed in temporary secondary containment. At the airstrip(s), up to 10,000 gallons of fuel may be held in temporary storage after offloading from aircraft.[32] Fuel will not be stored on lake ice. Refueling on frozen lakes (e.g., light plants) will follow CPAI's standard procedures for fuel transfer, and will be conducted in accordance with the requirements of the 1998 ROD. This approach has been approved by BLM, ADF&G, and ADNR for existing authorized exploration drilling programs in NPR-A.

2.1.5 Waste Management

All waste disposal procedures will conform to local, state, and federal requirements. Waste handling and disposal are described in the CPAI NPR-A waste management plan required for BLM permit approval. A waste management report to BLM is required annually. According to the Waste Management Plan, waste will be stored temporarily and periodically hauled back to existing North Slope facilities for proper treatment and disposal, as described in Section II.A.4 of EA: AK-020-00-011 and EA: AK-023-01-003, which are incorporated herein by reference. As an option, some rig camp facilities may incinerate burnable wastes; however, this is not planned for 2002-2003.

At each wellsite, the rig camp could generate about 5,000 gallons per day (gpd) domestic wastewater. Camp wastewater will either be processed in an approved, contractor-operated wastewater treatment system and discharged under the NPDES Permit, or hauled out of the NPR-A to an approved treatment/disposal facility.

[32] Pers. Comm., Mark Major, CPAI. December 2002.

CPAI is planning to use freshwater drilling muds. During operations, drill muds and cuttings will be temporarily stored on site, pending final disposal by annular injection or at an approved disposal facility. ADEC approval of the drilling waste storage plan and final disposal is required.

Crude oil produced during production testing will be held in contained tanks until testing is completed. After testing, the oil will be injected back into the formation or hauled out of the NPR-A for processing at an approved facility (i.e., for recycling). Produced gas will be flared in accordance with ADEC air permit requirements.

2.1.6 Air Emissions

Sources of air emissions from proposed operations include drill rig engines, generators, waste oil burners, heaters, light plants, incinerators, and well test flaring equipment. An Air Quality Permit is required from ADEC, and the Applicant has applied for coverage under its existing Exploration Air Quality Construction Permit. The required modeling for this permit demonstrated that under some conditions, some emissions may exceed Ambient Air Quality Standards (AAQS) near the drill rig.

To prevent public access to this area, exclusion zones will be established for single rig/well test operations (e.g., 98 meters or 322 feet out from the edge of a 1,000-foot by 1,000-foot pad, or adjusted by pad size and proximity to other rig/well test operation as required by the ADEC air permit). The Applicant will implement the public access control plan stipulated by ADEC. Signs in English and Inupiat will be strategically located on the ice road leading to the well pad and at least one sign will be placed on each side of the pad at the exclusion zone boundary. Entry by unauthorized personnel will be restricted.

Because the required modeling is very conservative for a temporary operation like winter exploration, ADEC offers special provisions in a "Permit-By-Rule" for drilling rigs and associated equipment (18 AAC 50.390). The Applicant has the option to operate under this regulation, provided all associated conditions and requirements are met. Because there is a limit of 180 days (per year), operation under the Permit-By-Rule can substantially reduce or eliminate the requirement for an exclusion zone, based on sulfur content of the fuel used.

In accordance with BLM Onshore Order No. 6 and APD Form 3160-3, the Applicant evaluated the potential for hydrogen sulfide (H_2S) and concluded that H_2S is not expected in significant quantities at either location. Measures and precautions associated with H_2S are addressed in the APD filed with the BLM.

2.1.7 Contingency Plans

Several contingency plans are required for the proposed action, with key plans summarized below.

Oil Discharge Prevention and Contingency Plan (ODPCP)

The Applicant is required to have oil spill response measures in place to meet federal and state requirements. For BLM to approve a Permit to Drill, CPAI must meet federal regulations 43 CFR 3160, Onshore Order Nos. 1, 2, and 6, and lease stipulations that deal with the prevention and control of oil spills and releases. Prior to commencing operations, CPAI must also have a site-specific ODPCP approved by ADEC. The ADEC-approved ODPCP is considered sufficient to meet BLM requirements, and is incorporated herein by reference.[33]

The Applicant has applied for coverage as a minor amendment to its existing North Slope Exploration ODPCP (ADEC Plan 024-CP-5096). Agency approval of the ODPCP is based on a number of factors, including whether response equipment capable of addressing any foreseeable spill incident can be deployed rapidly to the project site and spilled substances can be properly contained and recovered. Spill reporting, prevention, and training must comply with 1998 ROD Stipulations 7 through 17, and other relevant federal, state, and local requirements.

The approved ODPCP, along with approved spill control equipment and supplies, will be kept on site at all times. A CPAI representative and a spill technician from Alaska Clean Seas (ACS) will be on site at each drilling location. Twenty-four hour phone service will be available at the drilling camp. All communications are verified by field technicians prior to spud. CPAI maintains 24-hour security coverage in Anchorage, Kuparuk, and Alpine, with personnel trained to handle emergency calls. When needed, CPAI (or other responsible party) will call on resources of other North Slope operators through ACS, Mutual Aid, spill response cooperatives, and contractors, as well as local Village Response Teams, as available.

The ODPCP evaluates a well blowout as the worst case scenario, although this event is highly unlikely.[34] CPAI's well plan utilizes proven arctic technology, which is designed to control the well and prevent the release of uncontrolled fluids or gas to the surface, and

[33] The ODPCP is available at ADEC and DGC.

[34] IAP/EIS. p. IV-A-37.

BLM inspects all well plans and well construction prior to commencement of drilling.

By lease stipulation, exploration is limited to times when tundra, lakes, and streams are frozen and snow/ice covered. For the proposed action, no well drilling will begin until the well pad is accessible by ice road or hardened trail from Barrow, Camp Lonely, or the Alpine or Kuparuk oilfields nor before an airstrip is operational in the vicinity the wellsites. With access only by Rolligon and aircraft (from Deadhorse), drilling operations are to cease by April 21st. If drilling operations have not ceased by April 16th, a 5,000-foot ice airstrip must be available, and an additional 5,000-foot airstrip constructed within 10 days for additional air support, if needed.

The estimated response from discovery of a spill at the drill site to deployment of equipment varies depending on the incident, size of the spill, time of year, logistical support, and available information. The ODPCP estimates deployment time (mobilization and overland travel via Rolligon) from Deadhorse to this area at approximately 48 hours. Large aircraft could be deployed in a shorter time frame, depending on aircraft availability and requirements for spill response. For sites without ice road access, oil and oiled snow from a spill may be stored in lined interim storage pits constructed on insulated ice pads within ¼ mile of the wellsite. All wastes and accumulated liquids would be removed from the site for disposal the following winter.

For the planning scenario of an exploration well blowout, the response planning standard (RPS) is 5,500 barrels of oil per day (18 AAC 75.434). For a blowout lasting 15 days, the initial RPS volume would be 82,500 barrels, adjusted to 74,456 barrels based on prevention credits allowed by State regulation. Modeling indicates that 80 percent of the oil discharged would fall within 650 feet of the well; the remaining 20 percent would fall within 4,500 feet of the well. The blowout plume would lie along a NE-SW trending axis, potentially impacting sensitive areas.

The proposed drill site locations incorporate several area designations, including Miguakiak River special consideration area in the Teshekpuk Lake Special Area; Teshekpuk Lake Watershed Land Use Emphasis Area (LUEA), Teshekpuk Lake Caribou Habitat LUEA, and the Spectacled Eider Breeding Range LUEA. Other nearby considerations include the Teshekpuk Lake Special Protection Area, Goose Molting LUEA, Fish Habitat LUEA (Ikpikpuk River, Miguakiak River, and Teshekpuk Lake), and the Ikpikpuk Paleontological Sites LUEA. BLM considered these important resources in its decisions to lease lands, including the Puviaq project, that are in the immediate vicinity of Teshekpuk Lake. However, a blowout plume extending 4,500 feet southwest of Puviaq 1 could cross the (frozen) floodplain of the Miguakiak River.

Spill Prevention Control and Countermeasures (SPCC) Plans

An SPCC Plan addresses secondary containment for fuel storage in tanks larger than 660 gallons or when total fuel storage at a site is greater than 1,320 gallons, and provides guidelines for pollution prevention. In compliance with federal regulations,[35] the drilling contractor will have an approved SPCC Plan for fuel storage facilities associated with drilling, and the well testing contractor will have an approved SPCC Plan for its testing tanks.

Wildlife Protection and Encounter Plans

CPAI will employ a Polar Bear/Personnel Encounter Plan approved by the USFWS. [36] Measures in this plan also provide for the protection of other wildlife. Project personnel will be instructed not to feed wildlife of any type or in any way attempt to attract them either at drill sites or on ice transportation routes.

2.1.8 Operations and Maintenance

The proposed schedule calls for mobilization and ice construction to begin as early as December 2002, with drilling from ice pads beginning in January 2003. For proprietary and safety reasons, access to the drill rig and rig facilities will be restricted to authorized persons and regulatory personnel only. All other personnel must obtain authorization from CPAI Drilling or Field Environmental Compliance personnel. Additional discussion on operations and maintenance is included in Section II.A.9 of EA: AK-020-00-011, incorporated herein by reference.

Training

CPAI requires all North Slope employees and contractors to complete an 8-hour training program provided by the North Slope Training Cooperative (NSTC). The training program includes topics on general safety, personal protective equipment, camps, hazard communication, HAZWOPER Level 1, and Environmental Excellence. The NSTC also provides more specialized training (e.g., H_2S training), as needed.

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[35] 40 CFR 122.

[36] Proposed Polar Bear/Personnel Encounter Plan was submitted to USFWS by CPAI on September 10, 2002.

In compliance with Stipulations 63 through 65, CPAI has an approved orientation program, which is required for all personnel working in the NPR-A. This training module includes awareness of NPR-A-related environmental, social, and cultural concerns. Training topics include why and how to avoid disturbance of archaeological and biological resources, conflicts with subsistence hunting and fishing activities, and pertinent mitigation.

2.1.9 Abandonment and Restoration

Upon completion of drilling operations, all equipment and supplies will be removed; ice pads will be cleared of equipment and ice surfaces cleaned. Any debris will be hauled to an approved disposal site outside the NPR-A. Road and pad sites will be inspected to ensure proper cleanup. Wells will be plugged and abandoned or temporarily suspended prior to the end of the winter drilling season in accordance with BLM and AOGCC regulations. Procedures will be similar to those described in Section II.A.10 of EA: AK-020-00-011, incorporated herein by reference. BLM will approve final site closure, as needed.

2.1.10 Community Relations

In planning exploration programs, CPAI (formerly PAI and ARCO) has held a series of community meetings and consultations with residents of Nuiqsut, Barrow, Anaktuvuk Pass, Wainwright, and Atqasuk. Table 3 presents a summary of community involvement associated with exploration in the NPR-A. Meetings have continued on a regular basis as planning and work have continued in the NPR-A. CPAI has issued newsletters to keep local residents informed of planned activities. CPAI typically reviews proposed wellsites, ice road routes, and stream crossings with representatives from the NSB and local communities.

General concerns that have been expressed by local residents are levels of activity in their area, job availability for local residents, and potential impacts to caribou from summer studies (aircraft support), seismic activities, and future development. CPAI is addressing these issues with the local communities, regulatory agencies, and special interest groups (e.g., NPR-A SAP and the ICAS).

CPAI also posts its permit applications on the Internet to facilitate public access. On October 2, 2002, DGC initiated an ACMP review of the proposed action, including public notice in selected publications with a 30-day comment period. Public and agency comments were considered in the ACMP consistency

Community meeting in Nuiqsut

determination, issuing permits, and completing this NEPA analysis.

Cultural Resources

Proposed road, pad, and airstrip locations avoid known archaeological and cultural resources and TLUSs. Nine long-term use cabins are in the vicinity, although none are within 1,200 feet of project facilities. Several Native Allotments lie near the drill sites and access corridors (e.g., along the Miguikiak River), but are avoided by the project. An archaeological/cultural resources/TLUS clearance survey (Stipulation 74) was conducted for pad locations and along an approximately 1-mile-wide corridor represented by the new access routes shown in Figure 2.

Subsistence

The project area does not contain currently occupied human settlements, but is recognized as a subsistence use area for residents of Nuiqsut, Barrow, and Atqasuk. The communities of Wainwright and Anaktuvuk Pass also have an interest in local activities, as they rely on subsistence resources that may be found in the project area. Many of the associated public meetings and consultations included discussions on subsistence, as documented in Section 2.1.10 of this EA and in EA: AK-023-02-005 (Section III.C.4), EA: AK-020-00-011 (Section A.11), and EA: AK-023-01-003 (Section A.10), which are herein incorporated by reference.

The Applicant's plans include continuing consultation with subsistence users and implementing mitigation measures of Stipulation 61. CPAI will implement an approved subsistence monitoring plan per Stipulation 59, and continue consultation with stakeholders to find reasonable and effective methods to reduce the effects of exploration on subsistence. The NPR-A orientation

Table 3 Community Involvement for NPR-A Exploration

Date	Event (2001 events specify applicant/project focus)
1/8-9/98 & 8/21/98	Meeting with community members to identify cultural/traditional use data
6/2/99	Advised Arctic Slope Regional Corporation (ASRC) and Kuukpik Corporation of (BPX) intent to drill
6/24/99	Meetings with NSB Agencies (Planning and Public Works)
6/29/99	Briefed Kuukpik Corporation on survey work and field activities
7/99	Meeting with Nuiqsut leaders to identify concerns; briefed ICAS
7/27/99 & 7/29/99	Meeting with Kuukpik Corporation Subsistence Oversight Panel
7/29/99	Meeting with NSB Planning Commission (Barrow)
7/29/99	Meeting with Inupiat History, Language, and Culture Commission (IHLCC) in Barrow
7/29/99	Meeting with Nuiqsut Community
8/4/99	NSB, IHLCC, Kuukpik Corporation site visit to proposed drilling sites, water sources, and access routes
8/10/99	Site tours; NSB, Kuukpik Corporation visited drill sites, lakes, and access routes with ARCO and BLM
8/18/99	Community meeting at Anaktuvuk Pass
8/26/99	Open house at Barrow
8/26/99	Meeting with NSB Planning Commission
8/27/99	Community meeting at Atqasuk
9/30/99	NSB elders from Barrow and Nuiqsut toured (ARCO) water withdrawal lakes
10/27/99	Meeting with NSB Fish and Wildlife Management Committee
11/4/99	Meeting with NSB, IHLCC
11/10/99	Job fair (Nuiqsut)
12/15-99	Community meeting at Barrow
12/15/99	ICAS meeting
12/16/99	Meeting with NSB Planning Commission
12/16/99	Meeting with the Native Village of Barrow
12/16/99	NPR-A Subsistence Advisory Panel public meeting in Barrow
3/7/00	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
3/28/00	Meeting with NSB Fish and Game Management
5/22/00	Consultation with NSB biologists regarding summer studies
6/8/00	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/27/00	Pre-application meetings with various state agencies
8/4/00	Pre-application meetings with NSB and ICAS
8/9/00	NPR-A Subsistence Advisory Panel meeting in Wainwright
8/26/00	Site visit with BLM and NSB and applicants (BPX and Phillips)
8/31/00 & 9/28/00	Meeting with NSB Planning and Zoning Commission
10/11/00	Presentation of proposed programs in Anaktuvuk Pass
5/3/01	Village meeting in Anaktuvuk Pass (Phillips)
6/01	Meeting with Kuukpik Corporation executives (Anadarko's 5-year plan on North Slope)
7/16/01	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/31/01	Meeting with BLM at Altamura site (Anadarko)
8/13/01	Staking and site visit with Nuiqsut, BLM, and Applicant (Phillips)
8/16/01	NPR-A Subsistence Advisory Panel meeting in Nuiqsut – all projects
10/30/01	NPR-A Research and Monitoring Team Meeting (including Phillips, BPX, and Anadarko)
11/7/01	Ice Road Symposium (with agency, applicant, and NSB residents participating)
11/26 & 28/01	Community meeting in Nuiqsut and Anaktuvuk Pass (Anadarko)
11/26 - 29/01	Community meetings in Wainwright, Atqasuk, and Nuiqsut (Phillips)
12/13 & 14/01	NPR-A Subsistence Advisory Panel meeting in Barrow
3/14/02	NPR-A Subsistence Advisory Panel meeting in Barrow
5/16/02	Community meeting in Anaktuvuk Pass
6/6/02	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
7/25/02	NSB Planning Commission Meeting presentation
8/15/02	NPR-A Subsistence Advisory Panel meeting in Nuiqsut
11/4/02	KBWR Radio call-in
11/6/02	Annual Ice Road Symposium (Anchorage)
11/7/02	Community meeting in Nuiqsut
11/18/02	Government-to-government meeting with Native Village of Barrow (and BLM)
11/22/02	Open house (Barrow)
12/5/02	Community meeting in Atqasuk
12/12/02	NPR-A Subsistence Advisory Panel meeting in Barrow

program prepared by CPAI includes sensitivity to biological resources and habitats and avoidance of conflict with subsistence hunting and fishing activities.

Economic Opportunity

The CPAI employment process places a priority on local hire, and will ensure that NSB residents are provided with job opportunities. CPAI has undertaken a number of efforts to optimize local economic opportunities, which include sponsoring local job fairs, operating a 24-hour Jobs Hotline, notifying the Alaska Job Service of vacancies, notifying a network of 50 Alaska community organizations of vacancies, and advertising in local and community newspapers.

CPAI activities are partnered with North Slope villages and Native businesses to provide scholarships for education and training opportunities for shareholders and other residents to prepare for full-time employment in the oil and gas industry. CPAI also has sponsored a Career Quest Program to acquaint high school students with employment opportunities in the petroleum industry.

During the 2002-2003 winter exploration activities, CPAI may use local residents in a variety of roles, including the following:

- Monitoring (e.g., subsistence and polar bear)
- Ice road construction and maintenance
- Village liaison
- Project support and spill response

2.2 POSSIBLE FUTURE ACTION

As noted in the IAP/EIS, EA: AK-020-00-011, and EA: AK-023-01-003, exploration drilling is the only reliable method of verifying the presence of oil, and drilling may or may not result in discovery of potentially producible resources. If a discovery is made, it typically takes an additional 4 to 10 years for further study, design, and installation of facilities to begin production. Each phase of decision-making requires appropriate levels of environmental review and issuance of additional specific permits stipulating environmental protection and mitigation measures.

BLM regulations for a Permit to Drill provide the option of deferring plans for proposed facilities (*Subsequent Operations* under 43 CFR 3160). Based on the uncertainties associated with wells to be drilled in the proposed program, CPAI has elected to defer planning for future facilities. However, a general discussion of potential field development in the NPR-A is provided in the 1998 IAP/EIS and in EA: AK-020-00-011, to which this EA is tiered and the discussion of which is incorporated by reference.

The area likely would be operated in a manner similar to existing North Slope operations (e.g., Alpine and Kuparuk), incorporating all relevant design and environmental protection measures required by the IAP/EIS and ROD with oil transported to the TAPS for ultimate delivery to domestic markets.

2.3 ALTERNATIVES

The IAP/EIS evaluated alternatives based on national economic security needs and broad environmental issues. As a result, the 1998 ROD included 79 stipulations that substantially limit the range of possible exploration alternatives. This EA evaluates a proposed action designed to incorporate those stipulations, and is tiered to the broader alternatives already analyzed in the IAP/EIS (pp. II-19 through II-22) and in EA: AK-020-00-011 (pp. II-10 through II-13), EA: AK-023-01-003 (pp. II-11 and II-12), EA: AK-023-01-001 (pp. II-15 through II-18, and EA: AK-023-02-005 (pp. II-10 through II-13), which are incorporated herein by reference.

Alternatives to the proposed project are considered at several levels: alternatives considered but rejected from further evaluation, alternatives to the proposed action considered in this EA, and the no-action alternative.

2.3.1 Alternatives Considered but Eliminated from Detailed Analysis

The IAP/EIS evaluated a fairly specific exploration model, developing extensive, site-specific stipulations for that concept. The 1998 ROD, and the proposed action itself (i.e., drilling a specified number of exploration wells on specific oil and gas leases in the NPR-A) significantly limit alternatives for the location and timing of exploration in the NPR-A. Locations of leases with oil and gas prospects limits the options for feasible drill site locations and access routes. Therefore, only a few alternatives for exploration are possible. Some alternatives considered but eliminated from detailed analysis in this EA are described in Section II.C.1 of EA: AK-020-00-011 and EA: AK-023-01-003 (which are incorporated herein by reference), including access by temporary roads constructed of materials other than ice.

Based on site-specific conditions, one additional alternative was considered, but eliminated from detailed evaluation. This alternative involves drilling all wells from a single ice pad (i.e., directional drilling). However, the distance separating the targets at the two drill sites is farther than the capability of the drilling rig currently

stored at Puviaq. A more centrally located ice pad was not considered, as it would be too close to the Miguakiak River. In addition, extended reach drilling methods are rarely employed for exploration wells when alternatives are available.

Drilling a vertical well provides far better exploration data than drilling a deviated well. In the proposed action, optional sidetrack wells will be drilled only after the main well is drilled vertically and geologic information is collected to guide the sidetrack or deviated well bore. Additionally, drilling up to 4 reservoir penetrations (the proposed action) could require 2 years of operation, which would require construction of 2 ice pads regardless of drilling direction.

As noted previously, the extent of commercial oil and gas prospects on CPAI leases cannot be determined if the applicant is not allowed to drill the minimum number of wells needed to define prospective oil and gas deposits. Accordingly, alternatives involving drilling at fewer sites or drilling fewer wells than applied for were considered but eliminated from further evaluation in this EA.

The National Energy Policy and EO 13212 direct federal agencies to expedite review of permits and take actions needed to accelerate completion of energy-related projects. The Energy Policy specifically addresses the need to promote exploration and development of domestic resources, including the NPR-A.

In summary, all of the alternatives described above were eliminated because they do not meet the purposes of the proposed action, fail to reduce overall environmental impact or provide an environmental advantage, or are technically infeasible.

2.3.2 Alternatives to the Proposed Action

Several alternatives proposed in EA: AK-023-02-005 required further study and are still under consideration for exploration programs in the NPR-A. These are constructed water sources and elimination of ice road offsets. Based on limitations on exploration imposed by BLM lease stipulations, only a few alternatives warrant further consideration in this EA, including the following:

- Access by ice road, with air support
- Access by hardened snow trail, with air support
- Access by air
- No action

These alternatives have been described in several previous EAs, as referenced below.

Alternative 1 – Ice Road Access with Air Support

All drill sites would be accessed by ice road only, with air support. This alternative, discussed in EA: AK-020-00-011, which is tiered from and herein incorporated by reference,[37] eliminates the hardened trail and access by Rolligon. Ice road access is reconsidered in this EA.

The route would follow any of the existing authorized and proposed access corridors, and would eliminate all access by hardened snow trail. Emergency response would be by air or ice road only throughout the entire drilling program. Up to an additional 80-120 MG of water could be required for ice road construction, depending on routes utilized for logistical support, spill response, and waste management. All other elements of design and operation would be essentially the same as the proposed action, including location of facilities, infrastructure and operations, waste disposal, spill response, and reclamation.

Alternative 2 – Hardened Snow Trail Access with Air Support

This alternative, discussed in EA: AK-020-00-011, which is tiered from and herein incorporated by reference,[38] eliminates ice road access to the new drill sites. Hardened trail access is reconsidered in this EA.

Access to the two proposed new drill sites would be by overland hardened trail only, with air support. Local ice roads would likely be constructed to water sources to support ice pad/air strip construction and maintenance. The drill rig is currently stored near Puviaq 1. After drilling, it would be demobilized via a hardened overland trail along any of the existing and authorized access routes.

Water requirements would be reduced by approximately 80 MG with no ice road construction. Emergency response would be by air or overland travel, using approved tundra travel vehicles throughout the entire drilling program. Differences in spill response requirements were discussed above. All other elements of design and operation would be essentially the same as the proposed action, including location of facilities, infrastructure, operations, spill response, and reclamation. If a valid NPDES permit is not available for wastewater discharge, wastewater will be hauled to Barrow, involving at least two Rolligon roundtrips per

[37] USDOI BLM. EA: AK-020-00-011. pp. IV-26, IV-27, and Table 12.

[38] USDOI BLM. EA: AK-020-00-011. pp. IV-26, IV-27, and Table 12.

day for just that purpose, which requires more time and fuel consumption than trucking via ice road.

Alternative 3 – Access by Aircraft

This alternative considers air transport as the primary access mode, which requires Hercules-type aircraft for transport of the drill rig and other heavy equipment and facilities. Additional air support from smaller aircraft (e.g., Twin Otter) would also be required on a regular basis.

This alternative was evaluated in EA: AK-023-01-001[39] (pp. II-16 and II-17), which is tiered from and incorporated herein by reference. All other elements of design and operation would be essentially the same as the proposed action. Only local ice roads/pads/airstrips would be needed, with minor, local overland transport involved in initiating ice construction and support activities.

Air traffic to and from the site would be substantially increased, as described in EA: AK-023-01-001. Water requirements (total for all needs) would be reduced by approximately 80 MG with no need for ice roads. Emergency response would be by air or overland with approved tundra travel vehicles (if needed) throughout the entire drilling program. Operations such as logistical support, spill response, and waste management would be more difficult. On occasion, air travel is not possible due to weather conditions (e.g., fog, heavy/blowing snow, and extreme cold), which can persist for days at a time. As a result, local storage needs would increase, and likely more pad area would be required.

Alternative 4 – Egress via Smith Bay

This alternative considers demobilization of the drilling rig via a 7- to 10-mile ice road north to the coast, and an approximately 80-mile offshore sea ice road east to connect with the proposed Rolligon route in Harrison Bay. This alternative could eliminate 20 miles of overland travel associated with demobilizing the drill rig from the site back to Kuparuk. However, it could require up to 18 MG of water for ice road construction and sea ice road reinforcement (10 MG for overland ice road and 8 MG for 80 miles of sea ice reinforcement). This in turn would require a system of spur roads to numerous water supply lakes not otherwise required.

Alternative 5 – No Action

Under NEPA, the no-action alternative is required for an EIS analyses and is typically included in an EA evaluation. Under the no-action alternative, exploratory drilling under CPAI's existing valid oil and gas lease would not be allowed. CPAI's permit applications to BLM would be denied, and no drilling, overland transport, water withdrawal, or ice road/pad/airstrip construction would occur on federal lands in the NPR-A.

This EA will consider the no-action alternative against the base case of drilling up to four reservoir penetrations from up to two ice drill pads.

[39] USDOI BLM EA: AK-023-01-001. pp. II-16 and II-17.

Figure 2 Drilling Locations with Access Routes

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